

國立彰化師範大學 101 學年度碩士班招生考試試題

系所： 資訊管理學系

科目： 計算機概論

☆☆請在答案卷上作答☆☆

共 2 頁，第 1 頁

一、選擇題 (共 10 題，每題 4 分，共 40 分)

1. If a recursive function runs into an infinite loop, _____ will occur.
(a) heap overflow (b) compilation error (c) logical error
(d) stack overflow (e) none of the above.
2. In Java language, *int x=5; if (x%2 = 1) return 1 else return 0;* the returned value is _____.
(a) 0 (b) 1 (c) compilation error (d) runtime error (e) none of the above.
3. Which of the following device can locate your current position accurately?
(a) Wi-Fi (b) ADSL (c) 3G (d) GPS (e) none of the above.
4. The postfix notion of $2*(3+4)-5$ is _____.
(a) $234+5*-$ (b) $234+*5-$ (c) $2*34+5-$ (d) $34+2*5-$ (e) none of the above.
5. Which of the followings is not a server-side web language?
(a) ASP (b) PHP (c) Cold Fusion (d) C (e) none of the above.
6. *int x = 10; return x++;* the returned value is _____.
(a) 9 (b) 10 (c) 11 (d) 12 (e) none of the above.
7. Which of the following plays a central role in ensures referential integrity in RDBMS?
(a) primary key (b) secondary key (c) foreign key (d) index key (e) none of the above.
8. Public-key algorithm is a kind of _____ algorithms and it can guarantee integrity, _____, and privacy.
(a) symmetric, authentication (b) asymmetric, authentication (c) symmetric, authorization
(d) asymmetric, authorization (e) none of the above.
9. Using 8-bit allocation, a signed number -122 is represented as _____.
(a) 00000101 (b) 11111010 (c) 11110101 (d) 01111010 (e) none of the above.
10. Dynamic allocated memory is usually kept on _____.
(a) list (b) queue (c) stack (d) heap (e) none of the above.

二、填充題 (共 10 格，每格 4 分，共 40 分)

1. SaaS (Cloud Computing) stands for Software as a _____.
2. SQL (in Databases) stands for _____ Language.
3. ACID (in database system) stands for Atomicity, _____, _____ and _____.
4. NFC (in computer network) stands for _____ Communication.
5. CPU (in computer architecture) stands for _____ Unit.

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三、程式題 (共 2 題，每題 10 分，共 20 分)

1. The following program is written in C++ for testing the usage of virtual function. What is the output of the main function?

```
class B {
public:
    virtual    char f()        { return 'B'; }
              char g()        { return 'B'; }
              char testF()    { return f(); }
              char testG()    { return g(); }
};

class D : public B {
public:
              char f()        { return 'D'; }
              char g()        { return 'D'; }
};

void main() {
    D d;
    printf ("%c, %c", d.testF(), d.testG());
}
```

2. For the following pseudo-code function:

```
fun g(n, a) =
    if n = 0 then a
    else g(n-1, n*a)
```

(a) What is the result of $g(3, 1)$? You have to show detailed work of how you derive the answer. Considering the following function:

```
fun f(n) =
    if n = 0 then 1
    else n * f(n-1)
```

(b) What is the most significant difference between the function g and the function f in terms of stack management?